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A PRELIMINARY SURVEY OF RISK AND SAFETY OPERATIONS AT SELECTED --ETC(U)
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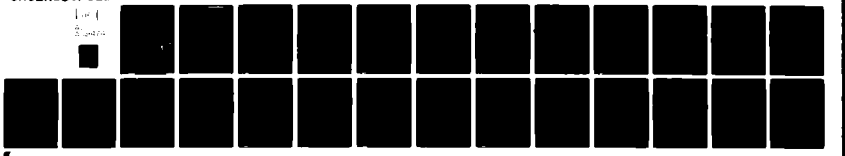

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A PRELIMINARY SURVEY OF RISK AND SAFETY OPERATIONS AT SELECTED UNIVERSITIES

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The Rand Paper Series

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I. INTRODUCTION

The objective of this brief paper is to provide some basis for identifying colleges and universities that offer courses in the fields of risk and safety. We intend this preliminary survey to be useful to both the student contemplating a career in safety and to the safety professional. We hope that the exchange is two way; not only will the student and the professional learn what is being offered or not being offered, but he or she could also influence those courses being offered and perhaps suggest new course content.

While our survey is too preliminary to identify holes in the curricula, it does suggest a number of trends.

- o During the past couple of years there has been a significant increase in the number of safety courses offered.
- o Safety courses are offered by not only the technical colleges such as engineering, but also by the business schools and the public policy schools.
- o The courses span a very wide range of interests and applications from teaching the technical person how to estimate risk to demonstrating the relation between the insurance industry and safety issues.
- o Some schools seem to specialize -- concentrating on fire safety or insurance or public policy or technological risk.

In this survey we examined a number of major colleges and universities to categorize the types of courses given in the general

fields of risk and safety. We have examined the course catalogs of a large number of colleges, selected at random based mainly on the ready availability of catalogs at Rand, and on microfiches available elsewhere. As a result, we can categorize the general types of courses given into the following:

- o Nuclear Engineering and Science: Risk, safety, radiation protection, licensing, siting, reliability, and so on.
- o General risk, safety and reliability; systems safety.
- o Risk and regulation.
- o Human factors engineering.
- o Health and safety.
- o Industrial safety, fire protection, industrial process hazards, etc.
- o Toxicological hazards.
- o Civil engineering: Structural safety, seismic safety, etc.
- o Environmental Science: Air, water and noise pollution.
- o Business Administration/Insurance/Law: Risk, liability and insurance.

In addition, there are many other related fields which we have not attempted to survey. For example, we have not considered seismic safety-related courses taught in the geologic sciences, nor courses taught in medical schools or departments. Within the range of specialties which we have examined, however, we can distinguish several opposing pairings of categories. For example, risk and safety courses, in general, are differentiated between hazards analysis on the one hand, and safety

practices and design on the other. Other dimorphisms include occupational risks (generally industrial safety), and general population risks (often environmental risks).

The remainder of this very introductory paper is divided into three sections. First we present those schools which offer degrees in risk and safety-related fields. Then, in the following section, we tabulate courses from a number of selected schools which do not offer specific degrees in risk and safety. However, in the time since we began this survey one school originally included in Section III has begun to offer such degrees. Thus, it is possible that others may also, in the near future, begin granting degrees in some of these areas. And, finally, in Section IV we select one school and describe in some detail those safety related courses that are offered. We think that in this brief survey it would be impracticable to detail those courses offered in each of these schools. We would encourage the interested reader to refer to the appropriate catalogs.

II. DEGREES IN RISK AND SAFETY-RELATED FIELDS

Table 1 lists those schools having degree programs in risk and safety related fields (Bluebook No. 17, and specific college catalogs). This listing includes not only major universities, but local colleges and technical schools as well. The degrees included are Certificate (C), Associate (A), Bachelors (B), Masters (M), Doctorate (D), and Other (O). A program consists of at least six courses in a focused discipline and at minimum leading to a certification but often leading to one or more degrees. The interested reader is encouraged to consult the appropriate catalog for detailed information.

This listing is not complete. We examine only a limited number of college and university catalogs, and we identify only a limited number of those courses offered. We did not gather a sufficient enough data base to arrive at any statistical inferences regarding the depth and breadth of courses that are offered.

In spite of the limited nature of our survey, we find an array of useful information.

During the past couple of years there has been a significant increase in the number of safety courses offered. Even during the course of this survey we identified one college who considerably increased its offerings in risk and safety fields. There is a growing trend to not only offer such courses, but also to offer specialties or degreed programs.

Safety courses are in no way limited to the technical schools and programs. Courses in risk and public policy, risk impact in insurance,

and risk management emphasize the nontechnical applications of risk analysis. Some of these nontechnical courses are just beginning to integrate technical expertise into their format. The converse -- technical courses introducing policy relevant format -- is somewhat less common but seems likely to emerge in the near future.

The technical courses emphasize application; that is to say, they estimate the risk of a one or a group of technologies. The social science type courses emphasize the relationship of technology to society.

Some schools seem to specialize -- concentrating on fire safety or insurance or public policy or technological risk. And, a number of schools seem to have very established programs. This is typically true of those schools offering the doctoral degree.

Table 1

RISK AND SAFETY DEGREE PROGRAMS IN U.S. SCHOOLS

ENVIRONMENTAL AND INDUSTRIAL HEALTH		
	(M)	University of Michigan
ENVIRONMENTAL AND PUBLIC HEALTH		
	(A)	Vincennes University, Indiana
	(B)	University of Wisconsin, Eau Claire
HEALTH AND SAFETY	(B/M)	California State University, Sacramento
	(B)	Southern University and Agricultural and Mechanical College, Louisiana
	(M)	Indiana State University
INDUSTRIAL SAFETY	(B)	University of Dubuque, Iowa
	(A)	Henry Ford City College, Michigan
	(B)	Texas A & M
INDUSTRIAL SAFETY AND HEALTH TECHNOLOGY		
	(A)	Cleveland County Technical Institute, N.C.
	(A)	Rowan Technical Institute, North Carolina
	(A)	Chesterfield-Marlboro Technical College, S.C.
RISK AND INSURANCE	(B)	Michigan State University
RISK AND SAFETY MANAGEMENT		
	(A)	North Central Technical College, Ohio
RISK MANAGEMENT AND INSURANCE		
	(B/M)	Florida State University
	(B)	University of Georgia
	(B)	Syracuse University
	(B/M/D)	University of Wisconsin, Madison

Table 1 (Cont.)

RISK AND SAFETY DEGREE PROGRAMS IN U.S. SCHOOLS

SAFETY	(M)	University of Wisconsin, Stout
SAFETY AND FIRE PROTECTION ENGINEERING TECHNOLOGY	(B)	Cogswell College, California
SAFETY AND TRAFFIC	(B)	University of Wisconsin, Platteville
SAFETY COORDINATOR	(C)	Triton College, Illinois
SAFETY EDUCATION	(B/M)	University of Southern California
	(B/M)	Central Missouri State University
	(M/D)	New York University
	(B)	Central State University, Oklahoma
	(B)	Shepherd College, West Virginia
	(M/D)	West Virginia University
	(B)	University of Wisconsin, Whitewater
SAFETY EDUCATION AND SERVICE	(M/D/O)	University of Tennessee, Knoxville
SAFETY ENGINEERING	(B/M)	Texas A & M
SAFETY ENGINEERING TECHNOLOGY	(A)	Cogswell College, California
SAFETY MANAGEMENT	(A)	Vincennes University, Indiana
	(A)	Detroit College of Business
	(A)	Cincinnati Technical College
SAFETY TECHNOLOGY	(A)	Indiana University, Bloomington
	(A/B)	Fairmont State College, West Virginia
	(A)	Waukesha County Technical Institute, Wisconsin

III. SPECIFIC RISK AND SAFETY COURSES

In this section we present a list of courses from selected schools and universities which do not specifically offer degree programs related to risk and safety. These range from a single course (with many schools offering none at all), to a variety of courses in several departments. Again, we point out that not all departments or schools within large universities were investigated. Those which we did survey include engineering and technical departments, business administration, management, and health and environmental sciences. We did not include the physical sciences, medicine, or social sciences in general. These courses, taken from the most recent catalogs from 17 randomly selected schools, are presented in Table 2.

Some courses are not devoted entirely to safety, others are.

Table 2

SELECTED RISK AND SAFETY COURSES

School	Course	Title
ARIZONA STATE UNIVERSITY		
College of Architecture:	Environmental Analysis and Planning	
	ANP 431	Programming for Public Health and Safety
CORNELL		
School of Engineering	A&EP 304	Introduction to Nuclear Scien and Engineering II
	A&EP 634	Nuclear Engineering Design Sem
DUKE UNIVERSITY		
Center for Resource and Environmental Policy Research		
	FES:383.01	Environmental Perspectives: Risks, Rights and Regulations
GEORGE WASHINGTON UNIVERSITY		
Department of Statistics		Risk Analysis
Continuing Engineering Education		Reliability and Risk Analysis
HARVARD		
School of Public Health:		
Environmental Health	EHI 201	Principles of Environmental Health
	EHI 204	Human Factors in Occupational Performance and Safety
	EHI 205	Current Topics in Occupational Health and Safety
	EHI 213	Occupational Safety Science
Env. Health Sciences	EHS 255	Health Hazards of Manufacturing Processes
	EHS 271	Introduction to Radiation Protection
	EHS 273	Advanced Topics in Radiation Protection
Engineering	ENG 282	Basic Problems in Occupational Health and Industrial Environments
	ENG 284	Community Air Pollution
LOUISIANA STATE UNIVERSITY		
Business Administration	BA 3440	Risk and Insurance
	BA 7417	Concepts in Risk and Insurance
NATIONAL INSTITUTE OF HEALTH		
	TOXI 517M	Survey of Toxicologic Risk Assessment Methodologies

Table 2 (Cont.)

SELECTED RISK AND SAFETY COURSES

School	Course	Title
NORTHWESTERN UNIVERSITY		
Civil Engineering	720-C06	Uncertainty Analysis
	720-C07	Earthquake Analysis and Risk Engineering
	720-C60	Environmental Impact Evaluation
	720-C61	Public Health Engineering
	720-C63	Community Air Pollution
	720-C65	Radiological Health
Industrial Engineering and Management Sciences		
	738-C21	Human Factors Engineering
Mechanical and Nuclear Engineering		
	740-C57	Alternative Energy Sources
	740-D07	Nuclear Power Reactor Safety
PURDUE		
Industrial Engineering	IE 558	Safety Engineering
Mechanical Engineering	ME 428	Sources and Control of Air Pollution
Nuclear Engineering	NE 402	Engineering of Nuclear Power Systems
RENSSELAER		
Civil Engineering	CE 33649	Earthquake Engineering
	CE 33658	Geostochastics
Nuclear Engineering	NE 38632	Safety Controls for Nuclear Operations
	NE 38633	Nuclear Reactor Reliability
Management	M 83646	Quantitative Analysis of Health Systems
STANFORD		
Mechanical Engineering	ME 115A	Human Values in Design
	ME 137	Air Pollution
	ME 138	Noise Pollution
	ME 180	Energy and Society
Operations Research	OR 355	Reliability Theory
STEVENS INSTITUTE OF TECHNOLOGY		
Civil Engineering	CE 145	Env. Impact Analysis and Planning
Management Science	MS 137/138	Human Factors in System Design
Mechanical Engineering	ME 141	Air Pollution Control

Table 2 (Cont.)

SELECTED RISK AND SAFETY COURSES

School	Course	Title
UNIVERSITY OF CALIFORNIA, LOS ANGELES		
Engineering and Applied Science		
	ENG 236C	Thermal Reactor Safety
	ENG 236D	Fast Reactor Safety
	ENG 236H	Probabilistic Risk Assessment
	ENG 267E	Structural Loads and Safety for Civil Structures
	ENG 268B	Failure of Structural Systems
UNIVERSITY OF MARYLAND		
Center for Philosophy and Public Policy		
	PHIL 408L/GUPT 479F	An Analysis of Risk
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL		
Business Administration	BA 120	Risk Management
Environmental Sciences and Engineering		
	ES&E 51	Environmental Protection
	ES&E 133	Environmental Health and the *Aquatic Environment*
	ES&E 141	Elements of Air Hygiene
	ES&E 142	Elements of Industrial Hygiene
	ES&E 161	Elements of Radiological Hygiene
UNIVERSITY OF WISCONSIN, MILWAUKEE		
Engineering-Mechanics	420	Environmental Health Engineering
Systems Design	482	Environmental Policy Analysis
WASHINGTON UNIVERSITY, ST. LOUIS		
Technology and Human Affairs		
	THA 142	Technology and Health Care Policy
	THA 262	Pollution and Environmental Impact
	THA 512	Technology Assessment and Public Policy
	THA 532	Technology and Environmental Management

IV. A DETAILED LOOK AT COURSES IN ONE SCHOOL

While we feel it would be highly impracticable to provide a detailed course description of each of the colleges and universities we looked at, let alone all of those out there, we feel that it might be useful to describe in some detail the types of courses offered within one department of one university. For this representative task we selected the Department of Health and Safety at Indiana University.

This department has a faculty of ten professors and offers a Bachelor of Science, a Master of Science, and a Master of Arts degree in Health and Safety. The broad aim of this Department is to teach academic and skill preparation of certain health science and safety professionals who are usually employed as educators, supervisors, coordinators, and administrators in schools, colleges, industries, and private government agencies.

The Bachelor of Science Degree in Community Health Education requires 62 semester hours and in Environmental Health Sciences requires 72 semester hours. A minimum of 18 semester hours is required for either the M.A. or the M.S. degrees.

Table 3

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
111	PERSONAL HEALTH SCIENCE--3 hours. Acquaints students with correct scientific information and data on matters of health which they and other members of society will encounter during their lives.
209	SURVEY OF CURRENT ENVIRONMENTAL HEALTH PROBLEMS--3 hours. Underlying causes and current status of health problems as they relate to the environment of man.
211	ADVANCED FIRST-AID AND EMERGENCY CARE--2 hours. Intensive study of very practical bodies of knowledge and skills in first-aid and emergency medical care to better qualify an individual to cope with common daily emergencies.
212	ENVIRONMENTAL SAFETY--3 hours. Study and evaluate significant concepts of modern ecology in searching into the nature of things related to environmental safety. The course is designed to cause students to question, analyze, generalize, and project safety into today's environment.
221	COMMUNITY HEALTH--3 hours. Community health problems and the community health movement at local, state, federal, and international levels.
310	PRINCIPLES AND PRACTICES OF ENVIRONMENTAL HEALTH I--4 hours. History, philosophy, and principles of general public health sanitation. Lectures, demonstrations, discussions, and visitations to enable familiarization with municipal, rural, commercial, and industrial sanitary practice.
311	FIRST-AID FOR INSTRUCTORS' CERTIFICATION--2 hours. Advanced consideration of first-aid subject matter, including instructional methods, techniques, and resources. Service as a teaching associate is required. Prerequisite: 211 or possession of standard and advanced first-aid certificate.
313	SCHOOL HEALTH EDUCATION--3 hours. The field of health science instruction as a subject of public school curricula. Includes essential preparation of the health science educator.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
314	SAFETY METHODS--3 hours. The course is designed to stimulate the student's ability and techniques in developing logical, practical, and economic practices in industrial plant safety programs.
315	INDUSTRIAL HYGIENE I--4 hours. A qualitative and quantitative study of man's working environment and the methods by which that environment is maintained in an acceptable level of hygiene.
316	PRINCIPLES AND PRACTICES OF ENVIRONMENTAL HEALTH II--4 hours. Systems concept as well as selected systematic procedures relating to environmental health programs, including program planning and evaluation of environmental health operations.
317	EPIDEMIOLOGY--3 hours. Epidemiology is the study of the etiological agents, reservoirs, vectors, cultural, geographic factors, etc., determining the occurrence of disease in a population; the natural history of disease and its control; and the study of the variables of disease: *time*, *place*, *person*.
318	OCCUPATIONAL SAFETY--3 hours. Current emphasis and trends in safety and accident prevention programs being promoted in connection with various types of service and production activities. Includes visitations for purpose of surveying actual safety programs in action.
319	INDUSTRIAL ACCIDENT PREVENTION--3 hours. A study of safety methods and practices as applied to public and industrial programs.
320	HEALTH ASPECTS OF HUMAN ECOLOGY--3 hours. Study of the ecological forces which influence man's health both quantitatively and qualitatively, and how man adapts to his environment in order to assure survival.
323	INTRODUCTION TO GENERAL SAFETY--3 hours. Designed to assist superintendents, principals, supervisors, teachers, students, school employees, and community leaders in planning and implementing safety education programs.
324	PUBLIC HEALTH CONTROL OF ENVIRONMENTAL POLLUTANTS--3 hours. Public health principles regarding surveillance and monitoring procedures dealing with environmental pollutants. Prerequisites: 221, 310, Life Sciences 101, Chemistry 103, 103L or special consent of the Department Chairperson.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
325	TRAFFIC AND TRANSPORTATION SAFETY--3 hours. Considers the chief problems of traffic safety and the promotion of programs dealing with automotive forms of transportation, highway design, traffic control, and traffic legislation.
326	ACCIDENT AND DISASTER CONTROL--2 hours. Major types of accident disaster situations and related preventive and remedial measures. Includes organizational features of control programs in schools, industries, and communities.
327	SCHOOL HEALTH SERVICES--3 hours. Thorough consideration of services related to health of pupils, including basic services, health appraisal, health counseling, and follow-through aspects.
328	FIRE PROTECTION AND HAZARDOUS MATERIALS SAFETY--3 hours. Designed for safety management professionals and students. Emphasis on methods and techniques related to fire protection, fire control, and handling of hazardous materials.
392	EDUCATIONAL METHODS FOR HEALTH AND SAFETY--2 hours. Methods, procedures, aids, devices, and material sources appropriate for use by the health and safety educator.
400A	COGNITIVE FOUNDATIONS IN EDUCATION--SEMINAR I--3 hours. Designed to enable health educators to establish sound foundations in contemporary health science literature. Prerequisites: Life Sciences 231 241.
400B	COGNITIVE FOUNDATIONS IN HEALTH EDUCATION--SEMINAR II--3 hours. Designed to enable health educators to establish sound foundations in contemporary health science. Prerequisites: Life Sciences 231 and 241, HLSF 400A.
422	CORPORATE SAFETY--3 hours. Safety management students will participate actively in studying the development and maintenance of current national-state safety standards in public and private organizations.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
413	EMERGENCY SAFETY SERVICES AND SECURITY--3 hours. The purpose of this course is to study methods of handling emergency safety problems and riot control in industry, communities, schools, institutions, etc.
415A*	DRIVER EDUCATION--3 hours. Designed to prepare teachers and administrators in methods, materials, and administrative techniques related to effective driver education in the schools. Prerequisite: 323 or currrent enrollment in same.
415B*	LABORATORY PROGRAMS IN DRIVER AND TRAFFIC SAFETY EDUCATION--3 hours. A technical examination of the aims, objectives, and role of laboratory programs in driver and traffic safety education.
416*	ADMINISTRATION OF SAFETY PROGRAMS--3 hours. Organizational features and administrative guidelines and techniques relating to safety programs in schools, industries, and divisions of government.
417*	COMMUNITY HEALTH AND SAFETY RESOURCES--2 hours. Structure and function of all resource agencies in the total community that contribute to human health and well-being approaches utilized in the coordination of programs and services.
418	SURVEY OF SAFETY RESEARCH AND EVALUATIVE TECHNIQUES--3 hours. Comprehensive investigation and review of research in the field of safety and accident prevention with emphasis on human and environmental factors.
422	PROFESSIONAL FIELD PRACTICE INTERNSHIP IN SAFETY MANAGEMENT--4 hours (per internship). Field work experience with organized safety programs of commercial, industrial, or governmental organizations. Credit may be earned on the basis of one hour for each four-week period of full-day service. Prerequisites: senior status; 211, 212, 314, 318, 319, 323, 325, 328, 413; Management 200, 400.
423	SAFETY SEMINAR PLANNING--3 hours. Each advanced safety management student will be doing original research and reports. All students will exchange reports through formal lectures, discussions, and handouts.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
425	TOXICOLOGY--2 hours. Principles and theories of poisoning; the mode of action of toxic substances; physiological systems affecting mechanisms of occurrence; prevention, treatment, and analysis. Prerequisites: Chemistry 103, 103L; Life Sciences 231, 241.
425L.	TOXICOLOGY--1 hour. Laboratory course for 425.
426*	HEALTH AND SAFETY SUPERVISION--2 hours. Supervisory methods, tools, and techniques designed to develop leadership qualities, to promote human relations, and to upgrade contributions of employee personnel involved in various types of health and safety programs.
427*	SPECIAL SUBJECTS IN HEALTH AND SAFETY--1-4 hours. Application of basic principles and current processes of problem solving to health and safety matters. Procedures and approaches for the development of impact documents will be studied. May be repeated for a maximum of four hours.
428	PUBLIC HEALTH EDUCATION--3 hours. Integration of public health principles, teaching procedures, understanding of behavioral characteristics of adults, and current health problems and health legislation in the educator's role as a community organizer, health planner, and in-service training consultant.
435*	DRIVER EDUCATION FOR THE HANDICAPPED--1-3 hours. Gives driver education instructors an opportunity to investigate problems relative to handicapped students and to develop appropriate curricula and teaching materials needed in the field of driver education and traffic safety for special education students.
436*	SEMINAR MOTORCYCLE SAFETY EDUCATION--3 hours. Provides an opportunity for administrators, driver education instructors, and interested students for exposure and discussion of current problems involving motorcycle education. Development of curricula and teaching materials.
438	TECHNICAL SEMINAR IN ENVIRONMENTAL HEALTH--2 hours. Concepts and methodologies for assessing the environmental consequences of technological development. Advanced techniques in analyzing and evaluating environmental health problems related to water, air, solid waste, shelter, food, and radiation. Professional preparation of

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
	reports in the above problem areas. Procedures and approaches for the preparation of environmental impact statements will be considered as well as case studies at the state and national levels.
439	ADMINISTRATIVE SEMINAR IN ENVIRONMENTAL HEALTH--2 hours. A study by students of the application of basic principles and processes of problem solving to health problems.
440	HEALTH BIOSTATISTICS--3 hours. Statistical methods in the study of human mortality, morbidity, and natality. Critical appraisal of census and vital data, measurement of risk, and introduction to life tables. Design of surveys in public health.
444	PUBLIC HEALTH ADMINISTRATION--3 hours. Public health administration and practice of personnel management; principles of organization, government, and law; public relations; expenditure of money; and the principles and political entities involved in fields related to public health.
445*	INNOVATIVE TEACHING TECHNIQUES FOR DRIVER AND TRAFFIC SAFETY--3 hours. Designed to prepare teachers to become competent in using simulation, radio communication, driving range, and program learning as integral parts of the high school driver and traffic safety education program.
447	PRACTICUM IN ENVIRONMENTAL HEALTH--3 hours. Environmental health laboratory experiences provided through field work, experiments, and evaluation and interpretation of data.
477L*	PRACTICUM IN ENVIRONMENTAL HEALTH--3 hours. Laboratory course for 477.
490	PROFESSIONAL FIELD PRACTICE INTERNSHIP IN ENVIRONMENTAL HEALTH--4 hours (per internship). Field work experience with functioning environmental health programs of commercial, industrial, or governmental organizations. Credit may be earned on the basis of one hour for each four-week period of full-day service. Prerequisites: senior status; 221, 310, 316, 317, 320, 326, 417, 440; Chemistry 103, 103L, 150, 150L; Mathematics 111; Life Sciences 274, 474; Physics 105.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
491	PROFESSIONAL FIELD PRACTICE INTERNSHIP IN COMMUNITY HEALTH EDUCATION --4 hours. Community health education field work in health agencies at local, state, or federal levels. Credit may be earned on the basis of one hour for each four-week period of full-day service. Prerequisites: senior status; 111, 221, 317, 392, 400A, 400B, 417, 426, 428; Home Economics 201; Chemistry 103, 103L; Life Sciences 231, 241, 274; Sociology 442.
515A	DRIVER EDUCATION--3 hours. Designed to prepare teachers and administrators in methods, materials, and administrative techniques related to effective driver education in the schools. Must be taken concurrently with 515B.
515B	LABORATORY PROGRAMS IN DRIVER AND TRAFFIC SAFETY EDUCATION--3 hours. A technical examination of the aims, objectives, and role of laboratory programs in driver and traffic safety education. A supervised student teaching experience. Must be taken concurrently with 515A.
516	ADMINISTRATION OF SAFETY PROGRAMS--3 hours. Organizational features and administrative guidelines and techniques relating to safety programs in schools, industries, and divisions of government.
517	COMMUNITY HEALTH AND SAFETY RESOURCES--2 hours. Structure and function of all resource agencies in the total community that contribute to human health and well-being, plus approaches utilized in the coordination of programs and services.
526	HEALTH AND SAFETY SUPERVISION--2 hours. Supervisory methods, tools, and techniques designed to develop leadership qualities, to promote human relations, and to upgrade contributions of employee personnel.
527	SPECIAL SUBJECTS IN HEALTH AND SAFETY--1-4 hours. Application of basic principles and current processes of problem solving to health and safety matters. Procedures and approaches for the development of impact documents will be studied. May be repeated for maximum of 4 hours.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
535	DRIVER EDUCATION FOR THE HANDICAPED--1-3 hours. Gives driver education instructors an opportunity to investigate problems relative to handicapped students and to develop appropriate curricula and teaching materials needed in the field of driver education and traffic safety for special education students.
536	SEMINAR IN MOTORCYCLE SAFETY EDUCATION--3 hours. Provides an opportunity for administrators, driver education instructors, and interested students for exposure and discussion of current problems involving motorcycle safety education. Development of curricula and teaching materials.
545	INNOVATIVE TEACHING TECHNIQUES FOR DRIVER AND TRAFFIC SAFETY--3 hours. Designed to prepare teachers to become competent in using simulation, radio communication, driving range, and program learning as integral parts of the high school driver and traffic safety education program.
601	RESEARCH IN HPER--3 hours. Various research methods and techniques as they apply to research in health and safety, physical education, recreation and leisure studies. Critical analysis of published research in health and safety, physical education, recreation and leisure studies.
602	INDEPENDENT RESEARCH IN HPER--1-3 hours. Independent research on special projects as designed by the student and his or her adviser. Course may be repeated with a maximum of three hours credit.
603	SPECIAL TOPICS FOR HPER--1-6 hours. Interdisciplinary studies which emphasize experiences in contemporary topics, problems, and/or research applicable to the disciplines of health, physical education, and recreation and leisure studies. (May be repeated with a change in course content for a maximum of 6 credit hours.) Prerequisite: major student in School of HPER or consent of instructor.
605	FOUNDATIONS AND TRENDS IN HPER--3 hours. History, principles, and trends in the fields of health, physical education, and recreation and leisure studies.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
606	PHYCHOLOGICAL IMPLICATIONS IN HPER--3 hours. Psychological aspects of physical activity in the fields of health, physical education, and recreation and leisure studies. Emphasis on the psychological, physiological, and sociological values of physical activity for the individual.
607	READING AND ANALYSIS OF PROFESSIONAL LITERATURE IN HPER--3 hours. Outstanding professional literature of health, physical education, recreation and leisure studies, and related fields with special emphasis on controversial issues. Designed for the advanced graduate students in HPER.
609	FACILITIES IN HPER--3 hours. Principles, nomenclature, standards for planning and construction, design, sites, equipment, costs analysis, and maintenance of facilites.
611	HEALTH SCIENCE FOR ADULT LIVING--3 hours. Advanced level of study dealing with fundamental and predominating health problems of the adult years, emphasizing knowledge, attitudes, and practices related to healthful living.
613	SCHOOL HEALTH CURRICULUM--3 hours. Philosophy, principles, and practices dealing with health curriculum, course of study development, and review of pertinent research. Designed for school personnel of all levels.
615	CURRENT ISSUES IN DRIVER AND TRAFFIC SAFETY EDUCATION--3 hours. Investigate problems, research, curricula, teaching methods, and teaching material involving factors which are currently related to driver performance; emphasis may change each semester. May be repeated for a maximum of 6 hours.
619	SEMINAR: PROBLEMS IN COMMUNITY HEALTH PROGRAM PLANNING, COORDINATION, AND OPERATIONAL RESEARCH--3 hours. Investigation of community health structure, organizations contributing to health care promotion, and problems involving interagency cooperation for improved coordination of services and programs.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
620	CRITICAL HEALTH ISSUES--3 hours. Designed for the professional educator and other personnel from allied fields. Professional experience in small and large group investigation and analysis of the critical issues confronting the health of mankind.
621	SPECIAL TOPICS IN HEALTH, SAFETY, AND THE ENVIRONMENT--1-3 hours. Recent advances and research in school health education, safety management, community health education, and environmental health; emphasis may change each semester. May be repeated for a maximum of 6 hours.
623	GENERAL SAFETY AND SAFETY EDUCATION--3 hours. Designed to provide an overview of the major safety problems of our times and to promote safety education in schools, social agencies, and the community.
624	ADMINISTRATION OF SCHOOL HEALTH PROGRAMS--3 hours. Total school health program including health services, healthful instruction, and healthful school living. Relationships of school and community in educating the individual for better health. Programs for elementary, junior high school, and senior high school levels are stressed.
625	TRAFFIC SAFETY--3 hours. Traffic legislation, principles of highway design and traffic control, and automotive transportation problems. Also includes review of current traffic safety research. Prerequisites: General Safety and Driver Education or equivalents.
627	METHODS AND TECHNIQUES FOR COMMUNITY HEALTH PLANNING AND COORDINATION--3 hours. Designed for community health and allied personnel engaged in agency and organizational responsibilities at all levels, and for individuals planning to enter such work. Content ranges from data collection and program planning through resources and communications.
628	PROGRAM EVALUATION IN HEALTH AND SAFETY--3 hours. Advanced techniques and methods of selecting, constructing, and utilizing instruments for evaluating all phases of health and safety programs, including development of evaluation reports. Actual practice in program evaluation is included. Prerequisites: 613, 624, or current enrollment in same.

Table 3 (Cont.)

HEALTH AND SAFETY COURSES AT INDIANA UNIVERSITY

COURSE NUMBER	TITLE AND DESCRIPTION
629	FIELD RESEARCH PROJECT IN HEALTH OR SAFETY--3 hours. Comprehensive study and written report involving a specific problem related to health or safety education, supervision, or administration in which program and/or personnel functions are observed, analyzed, and reported. Prerequisite: 628 or consent of Chairperson of the Department.
699	MASTER'S THESIS--6 hours. Arranged with student's thesis committee.

NOTE: Courses in the 500 series are open to undergraduate students as 400* series. Graduate students are required to do additional work of a research nature.

V. CONCLUSIONS

This brief survey is intended to help both the student seeking the appropriate school and industry trying to assist the academic community in their training of students. Because this survey is so brief, it is in no way intended to be complete. Rather it merely provides a shallow basis of information upon which the reader might build by locating the relevant catalogs.

In spite of the brevity of our survey, we did note several findings:

- During the past couple of years there has been a significant increase in the number of safety courses offered.
- Safety courses are offered by not only the technical colleges such as engineering, but also by the business schools and the public policy schools.
- The courses span a very wide range of interests and applications from teaching the technical person how to estimate risk to demonstrating the relation between the insurance industry and safety issues.
- Some schools seem to specialize -- concentrating on fire safety or insurance or public policy or technological risk.


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